

# Work Order ID 57359

April 6, 2010 8:56:59 AM



Page 1

Item ID:	D206-642-541	Accept		Setup	Start	
Revision ID:						
Item Name:	Replacement Skidtube				Stop	
Start Date:	06/04/2010	Start Qty:	1.00			
Required Date:	16/04/2010	Req'd Qty:	1.00			
Reference:						

Approvals:	Process Plan:		Date:	10-4-06	Tooling:		Date:		Run	Start	
	QC:		Date:		SPC (Y/N):		Date:			Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D3274	D								
IIN-D206-642	Rev M								
100		0.00							
	DOCUMENT CONTROL								
DC		0.00							
Document Control	Memo								
	Photocopy bluefile & type labels per PPP D206-642-541				CHG003				

N/A

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

**Work Order ID 57359**

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Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 06/04/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 16/04/2010 Req'd Qty: 1.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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110



Skidtubes

Skidtubes

0.00

Skidtubes

Memo

0.00

\*\*\*VERIFY AND INSPECT THE MATERIAL PRIOR TO USE\*\*\*

1- Bend FWD end of tube using bend prog D3274 FWD dwg D3274, cut fwd end of tube with saw table setup D3274.

11/01/17

2- remove fwd indexing ridge as per dwg D3274. Prepare for welding

DP 10-4-8

3- weld fwd cap as per dwg D3274 and QSI004

AR Aluminum Rod Batch: 7112507/113207

BE 10/04/12

4- grind fwd cap weld on top surface only

BE 10/04/12

5- Cut AFT end of tube at 170.9" as per dwg D3274 and deburr end.

11/01/14

6-Drill Aft cap pilot hole using DT8025

7 -Cleco DT8025 in position and install pilot hole drill Jig DT8742A,B,C,D.  
Drill 3/16" pilot holes as per Dwg D3274

8 -Remove inner indexing ridge on aft end of skidtube as per Dwg D3274 scribe batch #

11/01/14

9 -Open aft end cap holes to Ø0.208" as per Dwg D3274. Deburr aft end.

W/O:			WORK ORDER CHANGES					
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Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120

Chemical Conversion Coat per QSI005 4.1

0.00



HandFinish

Memo

0.00

Hand Finishing

1 - - AvM 10-4-14

130

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 M 10/4/15

140

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

8/10/04/15

(41)

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

April 6, 2010 8:56:59 AM



**Accept**

**Setup Start**

**Stop**



**Start Date:** 06/04/2010      **Start Qty:** 1.00

**Cust Item ID:**

**Required Date:** 16/04/2010      **Req'd Qty:** 1.00



**Customer:**

**Reference:**

**Approvals:**      **Process Plan:** \_\_\_\_\_ **Date:** \_\_\_\_\_ **Tooling:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

**Stop**



**Insp.  
Stamp**

0.00



## Skidtubes

## Skidtubes

## Memo

0.00

## Skidtubes

1-Open Ø0.313" and 0.375" crossbolt spacer holes using DT8743 as per Dwg D3274

2-Deburr crossbolt spacer holes as per Dwg D3274 and blow out chips from inside the tube

3-Bond web in place as per Dwg D3274 & QSI 015.

A/R ☐ Sikaflex-291 ☐ 1112429 ☐

Sikaflex expire date: ☐ 10/8/30 ☐

Start: ☐ 10/4/15 ☐ Time: ☐ 11:40 ☐

Finish: ☐ 12/4/20 ☐ Time: ☐ 8:10AM

(Adhere for 12 hours)

160

QC5- Inspect part completeness to step on W/O

0.00



QC

## Memo

0.00

## Quality Control

8/10/94/PL

11/6/19

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID: D206-642-541

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Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 06/04/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 16/04/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

170

0.00



Skidtubes

Skidtubes

Memo

0.00

1-Bend AFT end of tube using bend prog. D3274 AFT as per dwg D3274. Install drop pins in crossbolt spacer holes to maintain web position.

2- DRILL PILOT HOLES FOR WEARPLATES USING D3274-1T2  
OPEN HOLES TO .297" . Deburr

3-DRILL TOE PIN HOLE .640" DIA AS PER DWG USING DT8935 FWD  
END OF TUBE  
DEBURR INSIDE OF HOLE AS NECESSARY (DO NOT ENLARGE HOLES)  
REMOVE ANY FOREIGN OBJECTS INSIDE OF TUBES

4- Countersink crossbolt spacer holes as per Dwg D3274

5- prepare for welding

DP 10-4-20

BE 10-04-20

180

QC5- Inspect part completeness to step on W/O

0.00



QC

Quality Control

Memo

0.00

h = 3.10"  
L = 4.8"

8/10/04/20

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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Item ID:	D206-642-541	Accept		Setup	Start	
Revision ID:					Stop	
Item Name:	Replacement Skidtube					
Start Date:	06/04/2010	Start Qty:	1.00		Cust Item ID:	
Required Date:	16/04/2010	Req'd Qty:	1.00		Customer:	
Reference:						

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190  Skidtubes	Skidtubes	0.00							
Skidtubes	<p><b>Memo</b></p> <p>1-Insert D2649 &amp; D3275-1 crossbolt spacers. Weld as per QSI 004 and Dwg D3274. Remember to back drill each hole before welding the other side. Use aluminum rod</p> <p>A/R <input type="checkbox"/> Aluminum Rod <u>M112507</u> BE 10/04/28</p> <p>3-Grind cross bolt welds flush as per Dwg D3274.</p> <p>4-Counterbore 5/16" x 0.750" deep as per Dwg D3274 and deburr.</p>	0.00							
200  QC	QC5- Inspect part completeness to step on W/O	0.00							
Quality Control	<p><b>Memo</b></p> <p>Solo 10/05/04</p>	0.00							

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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**NOTE:** Date & initial all entries

# Work Order ID 57359

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Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 06/04/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 16/04/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

210

QC10- Inspect visual per QSI004- ground welds

0.00



QC

Memo

0.00

Quality Control

8 10/05/05

QC

220

Pressure Wash per QSI005 4.3

0.00



HandFinish

RE-ALODINEO PAR 09-043

Memo

0.00

Hand Finishing

10-5-6

230

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

11/4/07 10/05/06

Memo

0.00

Powder Coating

START TIME: 10:45AM  
OVEN TEMPERATURE: 320°F  
FINISH TIME: 11:15AM

1/6

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

# Work Order ID 57359

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Item ID: D206-642-541

Accept



Setup Start



Revision ID:

Item Name: Replacement Skidtube

Stop



Start Date: 06/04/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 16/04/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Draw  
Number

Draw  
Rev.

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

240

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

① BR 10-5-10.

250

HandFinishing

0.00



HandFinish

Memo

0.00

Hand Finishing

1-Install Nut Plate as per Dwg D3274. Apply LPS-3 to Nut Plate and rivets.  
A/R ☐ N ☐ A ☐ LPS-3

2-Install inserts as per Dwg D3274. Use a drop of Sikaflex inside insert holes a  
A/R ☐ ☐ Sikaflex-291 ☐ m 112 7129  
Sikaflex expire date: ☐ 10/08.

① BR 10-5-11.

260

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect Nut Plate & Inserts

Sidestly

⊗

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Required Date:	16/04/2010	Req'd Qty:	1.00			
Reference:						
				Cust Item ID:		
				Customer:		

Approvals:	Process Plan:	Date:	Tooling:	Date:	Run	Start	
	QC:	Date:	SPC (Y/N):	Date:		Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
270 	HAND FINISHING RESOURCE #1	0.00							
HandFinish	<b>Memo</b>	0.00							
Hand Finishing	1-Install wearpads & gaskets as per Dwg D3274.								
	2-Install ring as per Dwg D3274								
	A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> <u>11/24/09</u>								
	Sikaflex expire date: <input type="checkbox"/> <u>06/08</u>								
	3-Inspect for foreign objects as per QSI 024								
	4-Spray inside of tube on both-sides of web with LPS-3								
	A/R LPS-3 Batch: _____								
	5-Install Aft Cap and seal with Sikaflex. Clean excess adhesive.								
	A/R <input type="checkbox"/> Sikaflex-291 <input checked="" type="checkbox"/> <u>11/24/09</u>								
	Sikaflex expire date: <input type="checkbox"/> <u>10/08</u>								
280 	QC5- Inspect part completeness to step on W/O	0.00							
QC	<b>Memo</b>	0.00							
Quality Control									

① BR 10-5-11.

8/6/09/12

AL

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Reference:						

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Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
290  Packaging Packaging	Identify as per dwg & Stock Location: _____  Memo <i>PM 57362</i>	0.00  0.00							<i>CP/04</i>
300  QC Quality Control	QC21 - Final Inspection - Work Order Release  Memo	0.00  0.00							<i>10/05/17 AG</i> <i>BS10-5-17</i> <i>7</i>

W/O:			WORK ORDER CHANGES					
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# Picklist Print

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Work Order ID: 57359



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 06/04/2010

Required Date: 16/04/2010

Comments:

IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D2600-1-190

Manufactured No

110

Each

50.0000

1.0000



Extrusion Round 3" 206



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

50

47575

50

D3285-1

Manufactured No

110

Each

164.0000

1.0000



Cap



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

164

47635

15

52511

74

52647

75

D3282-041

Manufactured No

150

Each

4.0000

1.0000



Float Web (206L/407)



Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

LG

4

52696

4

1 m 10/4/17

1 BE 10/01/12

1 H 10/4/15

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Work Order ID: 57359



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 06/04/2010

Required Date: 16/04/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D2649

Manufactured No

190

Each

85.0000

12.0000



Cross Bolt Spacer

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

LG

85

55000

85

D3275-1

Manufactured No

190

Each

20.0000

12.0000



Crossbolt Spacer

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

LG

20

53453

20

CR3212-4-03

Purchased No

250

Each

219.0000

2.0000



Cherry Rivet

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST311

219

111359

92

112314

127

2 PR 10-5-11

April 6, 2010 8:57:04 AM

Shop Packet Print

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W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



# Picklist Print

April 6, 2010 8:57:04 AM

Page 3

Work Order ID: 57359



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 06/04/2010

Required Date: 16/04/2010

Comments:

IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3415-041

Manufactured No

250

Each

75.0000

1.0000



Nut Plate



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST056

33842 ✓

75

75

CCR264SS3-3

Purchased

No

250

Each

726.0000

2.0000



Cherry Rivet



1 BR 10-5-11

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST311

726

111548

4

112314

4

113539

92

113973 ✓

626

ALS4-1032-130

Purchased

No

250

Each

40.0000

78.0000



Insert



2 BR 10-5-11

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST282

110511

40

40

1144107

78. BR 10-5-11.

April 6, 2010 8:57:04 AM

Shop Packet Print

Page 3

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April 6, 2010 8:57:04 AM

Page 4

Work Order ID: 57359



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 06/04/2010

Required Date: 16/04/2010

Comments:

IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3536-15

Manufactured No

270

Each

19.0000

1.0000



Gasket



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

19

51600 ✓

7

56055

12

1 BR 10-5-11

D3536-23

Manufactured No

270

Each

7.0000

1.0000



Gasket



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

7

57529

7

53468

1 BR 10-5-11

D3536-35

Manufactured No

270

Each

11.0000

1.0000



Gasket



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

11

57530

11

51628

1 BR 10-5-11

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Shop Packet Print

Page 4

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April 6, 2010 8:57:04 AM

Page 5

Work Order ID: 57359

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Date: 06/04/2010

Required Date: 16/04/2010

Start Qty: 1.00

Required Qty: 1.00

D3536-39 Manufactured No 270 Each 11.0000 1.0000



Gasket

Warehouse Loc Qty Loc Code  
Location

Main Warehouse

FP 11

48161 1

51637 10

D3535-15 Manufactured No 270 Each 14.0000 1.0000



Wearshoe

Warehouse Loc Qty Loc Code  
Location

Main Warehouse

FP 14

53462 4

56053 10

D3535-35 Manufactured No 270 Each 9.0000 1.0000



Wearshoe

Warehouse Loc Qty Loc Code  
Location

Main Warehouse

FP 9

51608 9

April 6, 2010 8:57:04 AM

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Page 5

1 BR 10-5-11

1 BR 10-5-11

1 BR 10-5-11

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

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Page 6

Work Order ID: 57359



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Date: 06/04/2010

Required Date: 16/04/2010

Start Qty: 1.00

Required Qty: 1.00

D3535-39



Wearshoe

Manufactured No

270

Each

9.0000

1.0000



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

51619 ✓

9

9

D3535-23



Wearshoe

Manufactured No

270

Each

14.0000

1.0000



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

53467

56054 ✓

14

2

12

D3537-3



Wearpad

Manufactured No

270

Each

20.0000

1.0000



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

57512

35697

20

20

1 BR 10-5-11

April 6, 2010 8:57:04 AM

Shop Packet Print

Page 6

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



# Picklist Print

April 6, 2010 8:57:04 AM

Page 7

Work Order ID: 57359

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Date: 06/04/2010

Required Date: 16/04/2010

Start Qty: 1.00

Required Qty: 1.00

D3537-1

Manufactured No

270

Each

51.0000

9.0000



Wearpad



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

FP

57511  
55465

51

51

9 BR 10-5-11

AN960C10L

Purchased

No

270

Each

0.0000

80.0000



washer

NAS1149C 0332R

114341



80 BR 10-5-11

AN960C416

Purchased

No

270

Each

377.0000

1.0000



washer



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST346

100993

377

377

1 BR 10-5-11

April 6, 2010 8:57:04 AM

Shop Packet Print

Page 7

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April 6, 2010 8:57:04 AM

Page 8

Work Order ID: 57359

Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
 IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
 IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
 IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Date: 06/04/2010

Required Date: 16/04/2010

Start Qty: 1.00

Required Qty: 1.00

D3672-1



Phenolic Washer

Manufactured No 270 Each 1,589.000 2.0000



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST077

1589

47628

89

51674

500

52505

1000

AN3C4A



BOLT

Purchased No

270 Each 1,249.000 80.0000



## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST350

1249

113226

248

114103

501

114108

500

114523

46 BR 10-5-11

34 BR 10-5-11

April 6, 2010 8:57:04 AM

Shop Packet Print

Page 8

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:			WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April 6, 2010 8:57:04 AM

Page 9

Work Order ID: 57359



Parent Item: D206-642-541

Parent Item Name: Replacement Skidtube

Start Date: 06/04/2010

Required Date: 16/04/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

AN4C5A

Purchased

No

270

Each

534.0000

1.0000



BOLT

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

ST346

534

110552 ✓

34

112243

500

D2646

Manufactured

No

270

Each

35.0000

1.0000



Aft Cap

Warehouse

Loc Qty

Loc Code

Location

Main Warehouse

FP6

28

52663 ✓

28

Main Warehouse

fp7

7

52663

7

1 BR 10-5-11

1 BR 10-5-11.

April 6, 2010 8:57:04 AM

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Page 9

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP		Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
				Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

April 6, 2010 8:57:04 AM

Page 10

Work Order ID: 57359



Parent Item: D206-642-541



Parent Item Name: Replacement Skidtube

Start Date: 06/04/2010

Required Date: 16/04/2010

Comments: IPP Rev:B 05.09.23 Revised per D206-642 Rev. J KJ/JLM  
IPP Rev:C 07-02-23 Added SS Wearplates & Gaskets JLM  
IPP Rev:D 07-12-06 replace NAS1515H3L to D3672-1 DD  
IPP Rev:E 08-04-17 as per PAR 08-015 DD verified by:EC

Start Qty: 1.00

Required Qty: 1.00

D3413-1

Manufactured No

270

Each

31.0000

1.0000



Ring

## Warehouse

## Loc Qty

## Loc Code

### Location

Main Warehouse

ST473

58524

31

51586

8

53446

23

1 BL 10-5-12

April 6, 2010 8:57:04 AM

Shop Packet Print

Page 10

W/O:			WORK ORDER CHANGES					
DATE	STEP		PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



**DART**

RELEASED

07.02.12

DEO ATTACHED

DESIGN CP	DRAWN BY PH	DART AEROSPACE USA, INC. PORT HADLOCK, WA	
CHECKED #	APPROVED #	DRAWING NO. D3274	REV. D SHEET 1 OF 4
DATE 06.12.19		TITLE SKIDTUBE ASSEMBLY SCALE NTS	
A	04.03.15	NEW ISSUE	
B	04.08.09	MOVE SADDLE HOLE: 42.14 WAS 42.76	
C	05.03.16	ADD -043; NEW INSERTS	
D	06.12.19	NEW INSERTS, SS WEARSHOE + GASKET	

Qty -041	Qty -043	Part Number	Description
X		D3274-041	SKIDTUBE ASSEMBLY
	X	D3274-043	SKIDTUBE ASSEMBLY
1	1	D2600-1-240	EXTRUSION
1	1	D2646	AFT CAP
12	12	D2649	CROSS BOLT SPACER
12	37	D3275-1	CROSS BOLT SPACER
1	1	D3282-041	FLOAT WEB
1	1	D3285-1	CAP
1	1	D3413-1	RING
1	1	D3415-041	NUT PLATE
1	1	D3535-15	WEARSHOE
1	1	D3535-23	WEARSHOE
1	1	D3535-35	WEARSHOE
1	1	D3535-39	WEARSHOE
1	1	D3536-15	GASKET
1	1	D3536-23	GASKET
1	1	D3536-35	GASKET
1	1	D3536-39	GASKET
9	9	D3537-1	WEARPAD
1	1	D3537-3	WEARPAD
78	78	ALS7-1032-130	INSERT (or AKS4-1032-130, ALS4-1032-130, AELS-1032-130)
80	80	AN3C4A	BOLT
1	1	AN4C5A	BOLT
1	1	AN960C416	WASHER
80	80	AN960C10L	WASHER
2	2	CCR264SS3-3	RIVET
2	2	CR3212-4-03	RIVET
2	2	NAS1515H3L	WASHER

## GENERAL NOTES:

1. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
2. DAMAGE TOLERANCE ON FWD BEND:  
THERE SHOULD BE NO VISIBLE WRINKLES IN THE BEND FROM THE GROUND TO A HEIGHT OF 7 INCHES ABOVE THE GROUND. IT IS ACCEPTABLE TO POLISH OUT GOUGES UP TO 0.020 DEEP IN THE BENT PORTION OF THE TUBE. A MAXIMUM REDUCTION IN DIAMETER OF 0.150" IS ACCEPTABLE IN THE BENT PORTION OF THE TUBE.
3. ALL HOLES DRILLED ON CENTERLINES.
4. BOND D3282-041 FLOAT WEB INTO D3274-1/-3 OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015. ENSURE HOLES LINE-UP.
5. WELDING TO BE DONE PER DART QSI 004.
6. FINISH: - ACID ETCH, ALODINE ASSEMBLY PER DART QSI 005 4.1  
- POWDER COAT WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3
7. DRILL Ø0.297 HOLES FOR ALS7-1032-130 INSERTS USING DT3274-1T2 BEFORE FINISH. INSTALL ALS7-1032-130 INSERTS AFTER FINISH. SEAL WEARSHOE BOLTS WITH SIKAFLEX -241/-291.
8. SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

SHOP COPY

RETURN TO

ENGINEERING

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

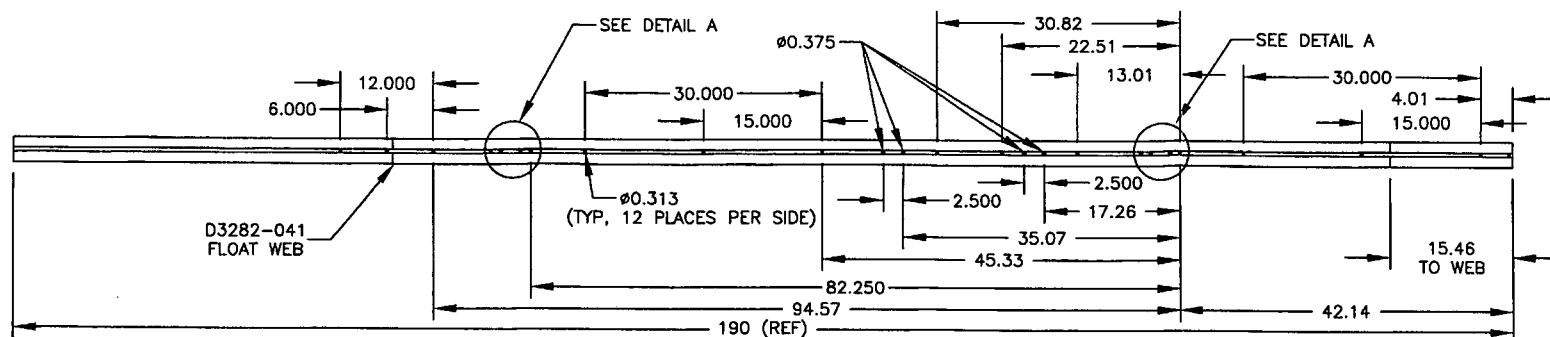
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BS10-4-04

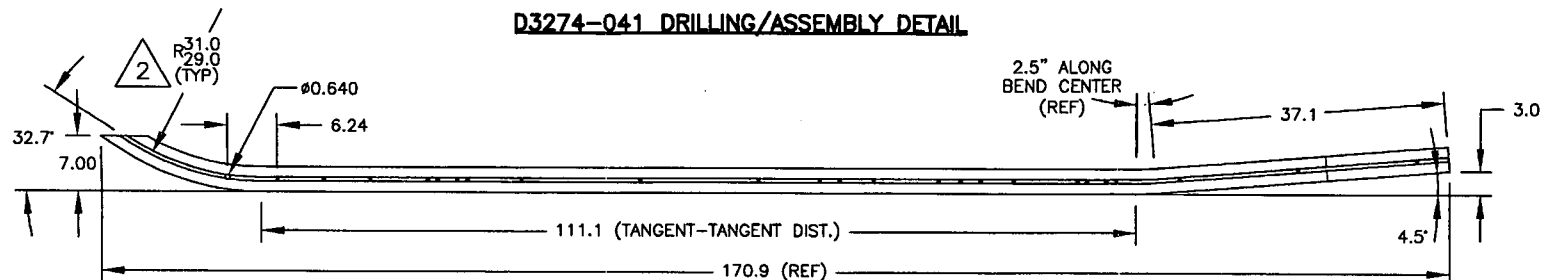
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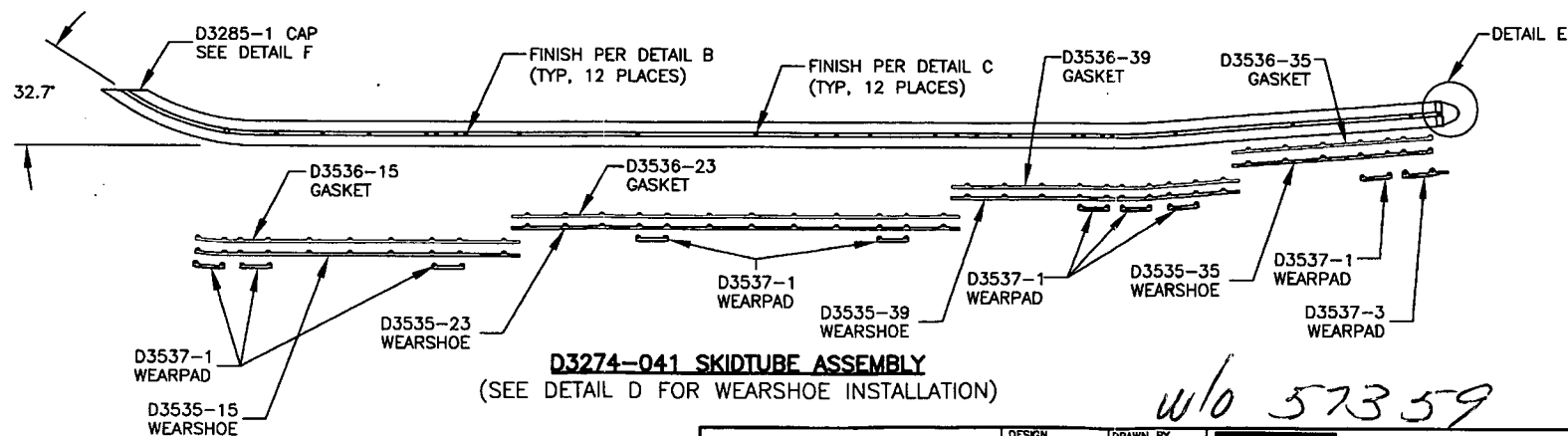
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**D3274-041 DRILLING/ASSEMBLY DETAIL**



**D3274-041 BEND/DRILLING DETAIL**



**D3274-041 SKIDTUBE ASSEMBLY**

(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

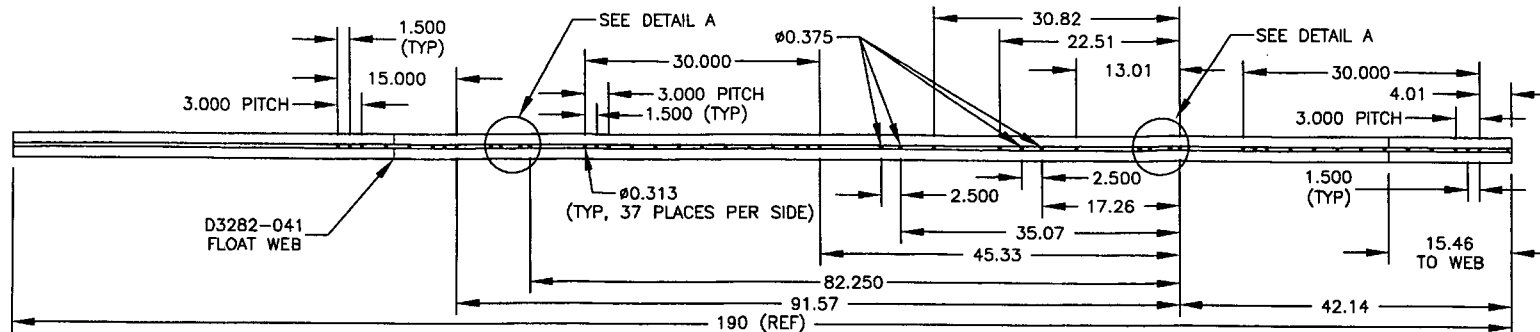
07.02.12

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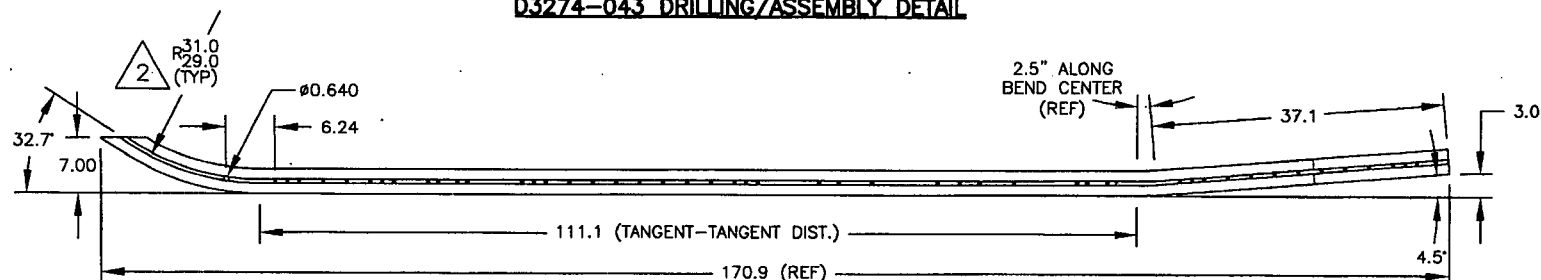
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DESIGN	CP	DRAWN BY	PH	<b>DART</b> DART AEROSPACE USA, INC. PORT WILKINSON, WA
CHECKED	#	APPROVED	#	DRAWING NO. D3274
DATE	06.12.19	TITLE	SKIDTUBE ASSEMBLY	REV. D SHEET 2 OF 4 SCALE 1:15

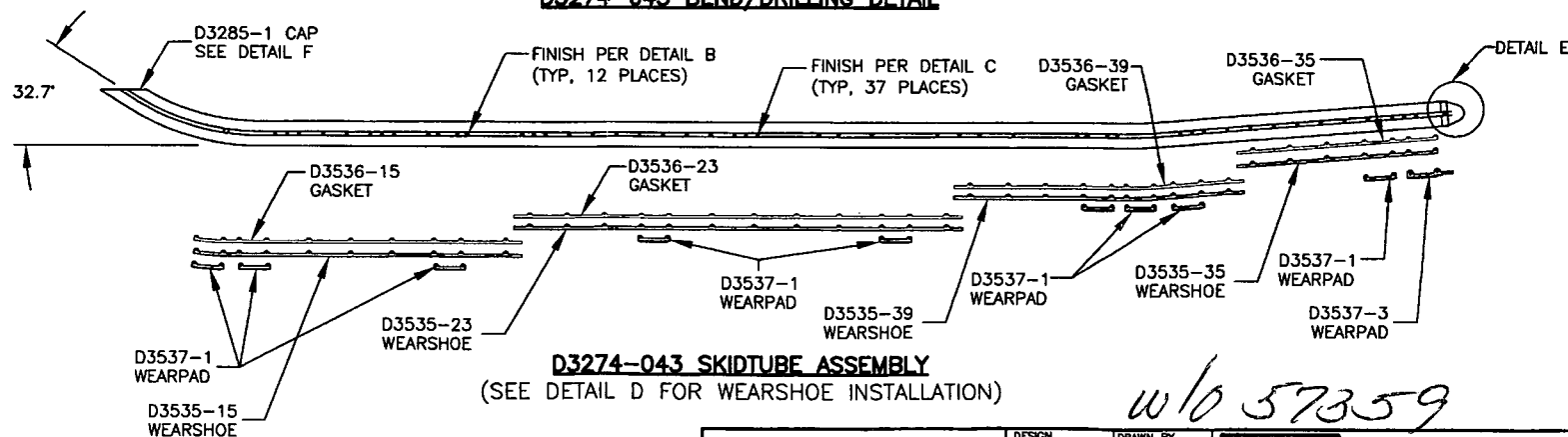
DEO ATTACHED



**D3274-043 DRILLING/ASSEMBLY DETAIL**



**D3274-043 BEND/DRILLING DETAIL**



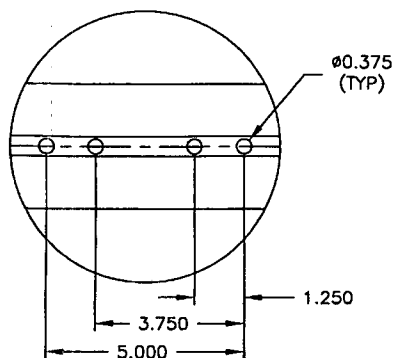
**D3274-043 SKIDTUBE ASSEMBLY**  
(SEE DETAIL D FOR WEARSHOE INSTALLATION)

RELEASED

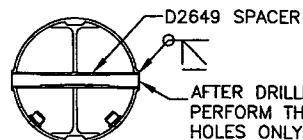
07.02.12

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THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.		CHECKED	#	APPROVED	#	DRAWING NO.	REV. D
		DATE	06.12.19			D3274	SHEET 3 OF 4
		TITLE					SCALE
		SKIDTUBE ASSEMBLY					1:15

# **DETAIL A: DRILL DETAIL**

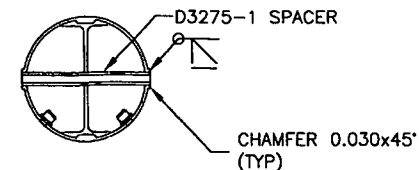


## **DETAIL B** FOR $\phi 0.375$ HOLES ONLY

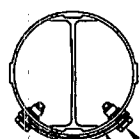


- AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR  $\phi 0.375$   
HOLES ONLY:
1. CHAMFER HOLE  $0.030 \times 45^\circ$
  2. INSERT D2649 SPACER
  3. WELD INTO PLACE AND GRIND FLUSH
  4. C'BORE TO  $\phi 0.313 \times 0.75$  DEEP

## **DETAIL C** FOR $\phi 0.313$ HOLES ONLY



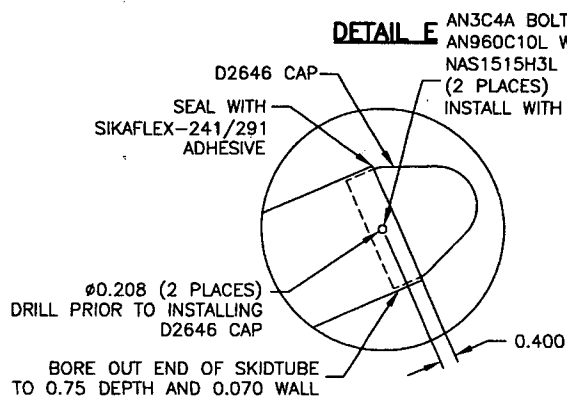
## **DETAIL D**



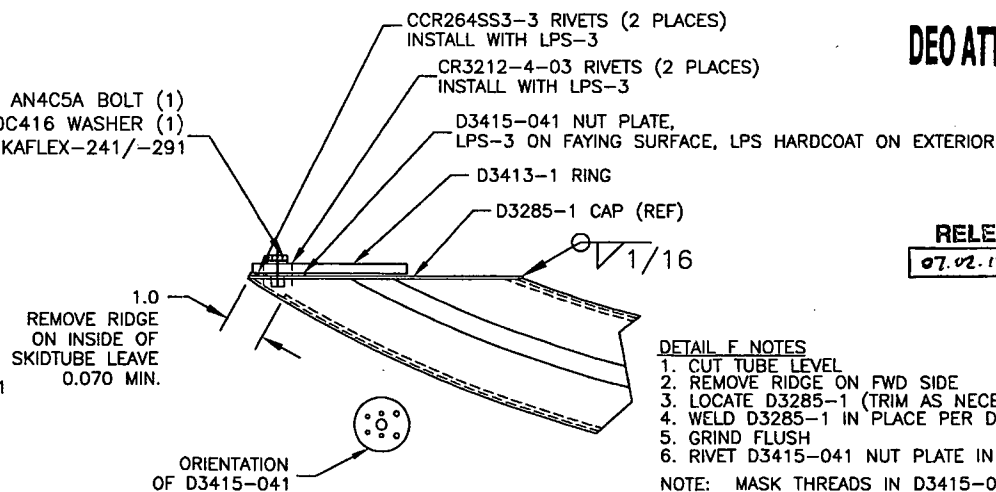
- ALS7-1032-130 INSERT (1)  
AN3C4A BOLT (1)  
AN960C10L WASHER (1)  
(78 PLACES)

GASKET/WEARSHOE/WEARPAD (REF)

## **DETAIL E**



## **DETAIL F: END FINISHING DETAIL**



**DEO ATTACHED**

**RELEASED**  
07.02.12

- DETAIL F NOTES**
1. CUT TUBE LEVEL
  2. REMOVE RIDGE ON FWD SIDE
  3. LOCATE D3285-1 (TRIM AS NECESSARY)
  4. WELD D3285-1 IN PLACE PER DART QSI 004
  5. GRIND FLUSH
  6. RIVET D3415-041 NUT PLATE IN PLACE
- NOTE: MASK THREADS IN D3415-041 PRIOR TO FINISH

*W/O 57359*

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CHECKED	#	APPROVED	#	DRAWING NO.		REV. D	
DATE		06.12.19		D3274		SHEET 4 OF 4	
TITLE				SKIDTUBE ASSEMBLY		SCALE	
						1:3	

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DRAWING NO. D3274	TITLE SKIDTUBE ASSEMBLY	REV. D	DART AEROSPACE USA, INC ENGINEERING ORDER		D.E.O. NO. D3274-D-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>UP</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>		DE APPR. <i>[Signature]</i>		
DATE 09.06.17	DATE 09.06.23	DATE 09/06/23	DATE 09/06/23		DATE 09.06.23		

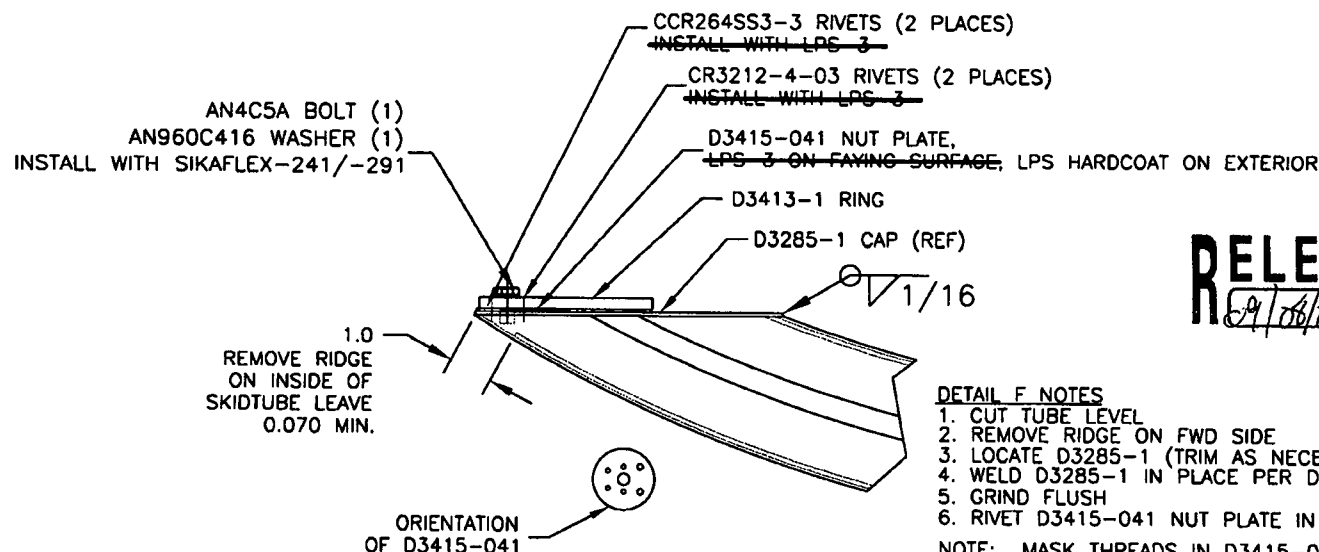
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF SKIDTUBE.

AMEND NOTE 8: "~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES 'LPS 3' AFTER FINISH AND INSTALLATION OF INSERTS.~~  
COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES 'LPS PROCYON' AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF  
POWDER COATING WITH MEK DEGREASER."

AMEND DETAIL F AS SHOWN:

*w/057359*

### DETAIL F: END FINISHING DETAIL



**RELEASED**  
*09/06/23*

#### DETAIL F NOTES

1. CUT TUBE LEVEL
2. REMOVE RIDGE ON FWD SIDE
3. LOCATE D3285-1 (TRIM AS NECESSARY)
4. WELD D3285-1 IN PLACE PER DART QSI 004
5. GRIND FLUSH
6. RIVET D3415-041 NUT PLATE IN PLACE

NOTE: MASK THREADS IN D3415-041  
PRIOR TO FINISH

NO 230

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliott  
Job number: 57356  
Part number: DAC6-642-541  
Description: Root tube  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminium  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier Rat. V Date of Test Coupon 10.05.05

Welder Barclay Elliott Date of Test Coupon 10-05-05

The above named individual is qualified in accordance with AWS D17.1.2001 to weld